

Appendix 1

Site Requirements for Waste Management Facilities

A1.0 Introduction

To assist the Waste Planning Authority in the identification of preferred sites from a list of existing sites, it has been necessary to establish the site requirements for each type of waste management facility.

A1.1 Recycling Centres (formerly known as CARCs)

Recycling Centres are sites to which householders may deliver household waste. These sites are provided by the County Council to facilitate and promote the re-use and recycling of waste materials, and to enable householders to dispose of bulky household waste free of charge. Recycling Centres can be linked to a Materials Reclamation Facility. The locations of existing Recycling Centres (together with the locations of “weekend skips”) are shown on **Map 1**.

Advantages

- Waste separation is carried out by the public
- Provides the public with the opportunity to dispose of bulky waste
- Reduces fly tipping
- Reduces the quantity of waste requiring collection by the Waste Collection Authority
- Promotes the ethos of re-use and recycling
- Provides a central location for the onward transfer of waste for final disposal
- Provides a central location for a source of recycled materials

Disadvantages

- Results in an overall increase in vehicle movements and distance travelled
- Increases traffic levels in the vicinity of the site
- Can cause adverse environmental impact on the immediate locality unless well managed
- Allows biodegradable waste to enter the waste stream

Site Requirements

- A simple Recycling Centre requires a site area of between 0.5 and 1.0 hectares
- When combined with MRF facilities, a larger site will be required

APPENDICES

Source: Devon County Council *Waste Local Plan June 2006*

- Site should be located so as to promote an integrated network of waste management facilities across the County
- Site should be located near to centre of population so as to maximise usage
- Site should be located so as to minimise the overall distance travelled by members of the public
- A Recycling Centre may be associated with other waste management facilities
- Facility should normally be located within an industrial area or brownfield site so as to minimise disturbance
- Site should be provided with good access by road to minimise congestion and reduce risk of accidents
- Adequate signing, together with advice at the site entrance, should be provided
- Public traffic should be segregated from service and collection vehicles, for example by use of split level site
- Site must be provided with sufficient space for the circulation/manoeuvring of traffic
- Traffic circulation arrangements should minimise the need to reverse
- Site must be provided with adequate parking and provision for queuing at peak periods
- Site requires an area of hardstanding
- Site requires the incorporation of surface water drainage facilities to minimise ground water pollution
- Provision should be made for the use of the site by pedestrians and cyclists
- Site should be screened so as to minimise visual intrusion
- Site should be fenced to contain litter
- Site will require adequate illumination

A1.2 Materials Reclamation Facilities (MRFs)

MRFs are facilities for the sorting, processing and baling of recyclable waste, thus facilitating the re-use and recycling of waste materials. MRFs usually include multi-stream separation facilities, receiving sorted or unsorted wastes. The wastes are sorted into recyclable and non-recyclable components. A MRF which receives unsorted wastes may be referred to as a "dirty MRF". The scale of MRFs can vary, with some of them requiring storage facilities prior to processing. The locations of existing MRF sites are shown on **Map 1**.

Advantages

- Provides a central location for the onward transfer of waste for final disposal
- Provides a facility for the bulking of wastes so as to minimise the number of vehicle movements and distance travelled
- Promotes the re-use and recycling of waste materials
- Provides a central location for a source of recycled materials
- Can provide a front end to other waste management facilities - for example, by removing waste of low calorific value from an incinerator waste stream

Disadvantages

- Increases traffic levels in the vicinity of the site
- Can cause adverse environmental impact on the immediate locality unless well managed

Site Requirements

- A typical MRF would occupy a site area of between 1 and 2 hectares
- Site should be located so as to promote an integrated network of waste management facilities across the County
- Site should be located so as to minimise the overall distance travelled by vehicles
- Facility should normally be located within an industrial area or brownfield site so as to minimise disturbance
- Sites should not be located adjacent to residential development
- Site should be provided with good road access to minimise congestion and reduce risk of accidents
- Where possible, major sites should be served by alternative modes of transport such as rail or water
- Where possible, MRFs should be located adjacent to other waste management facilities such as at landfill sites or other residual waste processing facilities so as to reduce vehicle movements and distance travelled
- Site will require an area of hardstanding
- Site will require the incorporation of surface water drainage facilities to minimise ground water pollution
- Site will require storage area and loading facilities, and may require buildings to accommodate under cover storage and plant
- Site should be screened so as to minimise visual intrusion
- Where appropriate, covered storage should be provided to limit generation of leachate, and contamination of the products
- Site should be fenced to contain litter

A1.3 Inert Waste Recycling Facilities

Inert waste recycling facilities enable the re-use and recycling of such wastes, which include mainly construction and demolition materials. Such facilities can be located at specific sites receiving source materials by skip or bulk vehicle transport for subsequent processing. Facilities can also be mobile, being located at the source of material, such as a demolition site. The locations of existing inert waste recycling facilities are shown on **Map 2**.

Advantages

- Reduces the quantity of inert waste requiring final disposal at landfill sites
- Reduces the need for the quarrying of primary aggregates
- Can enable materials to be recycled or re-used on site, thus reducing vehicle movements
- Provides a central location for the source of recyclates

APPENDICES

Source: Devon County Council *Waste Local Plan June 2006*

- Can extend the life of a site which provides local employment

Disadvantages

- Increases traffic levels in the vicinity of the site
- Can cause adverse environmental impact, particularly from noise and dust, on the immediate locality, unless well managed

Site Requirements

- Site should be located away from residential areas
- Facility should normally be located within an industrial area or brownfield site so as to minimise disturbance, or associated with an operational quarry or landfill site so as to minimise the need to transport materials
- Site should be provided with good access by road to minimise congestion and reduce risk of accidents
- Site will require an area of hardstanding for stockpiles of materials
- Site will require the incorporation of surface water drainage facilities to minimise ground water pollution
- Site will require hardstanding or buildings to accommodate machinery and plant
- Site should be screened so as to minimise visual intrusion

A1.4 Scrapyards

Scrapyards can include car breakers, vehicle dismantlers, metal recycling sites and sites used for the storage and final resting place of end of life and abandoned vehicles of all types. Car breakers and vehicle dismantlers enable the recycling and re-use of car parts, thus by-passing the waste stream. Metal recycling sites and scrapyards enable recycling of the metals for the manufacturing industry. The locations of existing scrapyards are shown on **Map 3**.

Advantages

- Aids the re-use of vehicle parts
- Aids the recovery of metals and other materials for recycling
- Provides a local disposal facility for vehicles which might otherwise be abandoned
- Provision of a centralised facility may reduce the overall number of vehicle movements in the area

Disadvantages

- Can cause adverse environmental problems, for example noise, dust or groundwater pollution, in the immediate vicinity
- Will increase vehicle movements in the immediate vicinity of the development
- Visual intrusion is often a problem, especially if the site is not under cover

Site Requirements

- Facility should be located within an appropriate industrial area or brownfield site so as to minimise disturbance

- Site should be located away from residential areas
- Site should be located so as to minimise the overall distance travelled by vehicles
- Site should be provided with good access by road to minimise congestion and reduce risk of accidents
- Where possible, storage should be under cover
- Site will require an area of hardstanding for stockpiles of materials
- Site will require hardstanding or buildings to accommodate machinery and plant
- Site will require the incorporation of surface water drainage facilities to minimise ground water pollution
- Site should be screened so as to minimise visual intrusion

A1.5 Waste Transfer Stations

Waste Transfer Stations are used to transfer household, commercial and industrial waste to larger vehicles for onward transport for recycling, composting or other treatment, or to final disposal sites. Waste Transfer Stations can include different methods of transfer, such as skip transfer, bulk vehicle transfer, road to water, or road to rail. Some stations may only handle one type of waste, but most deal with more.

The Waste Disposal Authority currently operates waste transfer stations at Marsh Barton Trading Estate, Exeter; Tiverton; Crowndale, Tavistock; and Punchbowl, Crediton. There is also a transfer station at the Yalberton industrial estate serving Torbay. In addition, there are a number of smaller privately operated sites, mainly dealing with inert waste, often related to skip hire businesses. The locations of existing waste transfer stations are shown on **Map 4**.

Advantages

- Provides bulking up facility to reduce vehicle movements and overall distance travelled
- Can concentrate specific materials to provide economic quantities for re-use or recycling

Disadvantages

- Increases heavy vehicle traffic in the vicinity of the site
- Can cause adverse environmental impact on the immediate locality

Site Requirements

- A typical Waste Transfer Station would occupy a site area of between 0.5 and 1.0 hectares
- Site should be located so as to promote an integrated network of waste management facilities across the County
- Facility should normally be located within an industrial area or brownfield site so as to minimise disturbance
- Site should be located away from residential areas
- Site should be located so as to minimise the overall distance travelled by vehicles

- Site should be provided with good access by road to minimise congestion and reduce risk of accidents
- Where possible, major sites should be served by alternative modes of transport such as rail or water
- Opportunity should be taken to locate Waste Transfer Stations in association with other waste management facilities such as MRFs or Recycling Centres
- Site will require an area of hardstanding for stockpiles of materials
- Site will require hardstanding or buildings to accommodate machinery and plant
- Site will require the incorporation of surface water drainage facilities to minimise ground water pollution
- Site should be screened so as to minimise visual intrusion
- Site should be fenced to contain litter

A1.6 Greenwaste Composting Sites

Composting involves the aerobic decomposition of organic waste to form compost or a soil improver. It can be carried out in the open air on a hardstanding, or in a building. Greenwaste consists mainly of grass cuttings, leaves or prunings from parks and gardens, although it may be mixed with cardboard waste as this can be beneficial due to its water retentive properties. Greenwaste composting sites may vary in scale from local or community based schemes to larger centralised operations. The locations of existing composting sites are shown on **Map 5**.

Advantages

- Removes a significant element of the biodegradable content of the waste stream, in line with the Landfill Directive
- Provides a useful product for use in agriculture and horticulture
- Reduces the need for compost from peat or other primary sources
- Provides an alternative land use for surplus agricultural land to aid diversification
- Relatively low cost to commission
- Suitable for a wide range of scales of operation

Disadvantages

- Removes material with a high calorific value from the waste stream
- Products may be contaminated unless a high level of pre-sorting is undertaken
- Limited to materials which have not been in contact with meat or animal by-products – to meet the requirements of the Animal By-Product Regulations, even meat-excluded catering waste must be kept as a completely separate waste stream
- Can lead to emissions of pollutants and odours

Site Requirements

- Typical site area would be up to 2 or 3 hectares, but would be dependent on the scale and nature of the operation

- Suitable locations could include existing landfill sites, industrial sites or brownfield sites, or could be sited on or adjacent to agricultural land where the end product may be utilised on site
- Site may require an area of hardstanding and buildings for plant
- Site must have suitable drainage to control the risk of pollution of groundwater
- Site should be at least 100 metres away from, and should not be up gradient of, any well, borehole, reservoir or other groundwater supply, unless special provision has been made
- Site should be provided with good access by road to minimise congestion and reduce risk of accidents
- Currently, the boundary of the facility should be more than 250 metres from a workplace, or the boundary of a dwelling, unless a risk assessment has shown this to be unnecessary

A1.7 Mixed Waste Composting Sites

The term **"Mixed Waste"** refers to household and other wastes which may contain meat, or other products derived from animals. Mixed waste composting sites may vary in scale from local/community based schemes to larger centralised operations, although they are more likely to be the latter. Currently, Heathfield is the only operational composting site accepting mixed waste in Devon.

NOTE: The **Animal By-Products (Amendment) Order 2001** currently prohibits the spreading of mixed waste compost containing meat, or any other products derived from animals, on land where animals (including wild birds) may have access. If there is a possibility that biodegradable or catering waste has come into contact with meat, then it must be processed in accordance with the Animal By-Products Regulations. To meet these regulations, meat-excluded catering waste must be treated as a completely separate waste stream. Many of the restrictions which apply to mixed waste do not apply to greenwaste, which consists mainly of grass cuttings, leaves or prunings from parks and gardens

Advantages

- Removes a significant element of the biodegradable content of the waste stream, in line with the Landfill Directive
- Provides a useful product for use in agriculture and horticulture
- Reduces the need for compost from peat or other primary sources
- Provides an alternative land use for surplus agricultural land to aid diversification
- Relatively low cost to commission
- Suitable for a wide range of scales of operation

Disadvantages

- Removes material with a high calorific value from the waste stream
- Products may be contaminated unless high level of pre-sorting is undertaken
- Can lead to emissions of pollutants and odours
- Presence of animal products may increase the risk of spreading animal diseases

APPENDICES

Source: Devon County Council *Waste Local Plan June 2006***Site Requirements**

- Typical site area would be 1 to 2 hectares, but would be dependent on the scale and nature of the operation
- Suitable locations could include existing landfill sites, industrial sites or brownfield sites
- Site will require an area of hardstanding and buildings for plant
- Site may require large industrial buildings, which should not be placed in prominent positions, and will require screening
- Site will require suitable drainage provision to control the risk of pollution of groundwater
- Site should be provided with good access by road to minimise congestion and reduce risk of accidents
- Site should be at least 100 metres away from, and should not be up gradient of, any well, borehole, reservoir or other groundwater supply, unless special provision has been made
- Currently, the boundary of the facility should be more than 250 metres from a workplace, or the boundary of a dwelling, unless a risk assessment has shown this to be unnecessary
- Site should be screened so as to minimise visual intrusion
- Site should be fenced to contain litter

A1.8 Mechanical Biological Treatment (MBT)

The term “**Mechanical Biological Treatment**” is a “portmanteau” term which refers to a number of processes which can be used to further treat residual waste prior to final disposal. The aim of **MBT** is to minimise the environmental impacts of end disposal, and to gain further value from the waste through the recovery of recyclables (mainly metals) and, in some cases, energy. **MBT** sites will vary in scale according to the processes taking place. There are currently no operational MBT sites in Devon, or elsewhere in the UK.

Advantages

- Removes a significant element of the biodegradable content of the waste stream, in line with the Landfill Directive
- Can provide a Refuse Derived Fuel (RDF) for combustion in energy from waste plants
- Heat treatment can sanitise the product to enable further separation to take place
- Suitable for a wide range of scales of operation

Disadvantages

- Products may be contaminated unless high level of pre-sorting is undertaken
- Can lead to emissions of pollutants and odours

Site Requirements

- Site should be located so as to promote an integrated network of waste management facilities across the County

- Suitable locations could include sites adjacent to existing landfill sites or other waste management facilities, industrial sites or brownfield sites
- Site should be provided with good access by road to minimise congestion and reduce risk of accidents
- Site will require an area of hardstanding and buildings for plant
- Site may require large industrial buildings, which should not be placed in prominent positions, and will require screening
- Site will require suitable drainage provision to control the risk of pollution of groundwater
- Site should be at least 100 metres away from, and should not be up gradient of, any well, borehole, reservoir or other groundwater supply, unless special provision has been made
- Currently, the boundary of the facility should be more than 250 metres from a workplace, or the boundary of a dwelling, unless a risk assessment has shown this to be unnecessary
- Site should be fenced to contain litter

A1.9 Incineration with Energy Recovery

Incinerators can vary greatly in scale, with a range of capacities from about 20,000 to 500,000 tonnes per annum. Modular systems processing between 20,000 and 90,000 tonnes per annum may be more appropriate for smaller communities and could form part of a network of such facilities across the County. Larger installations would play more of a strategic role. Whilst incinerators are totally enclosed in industrial buildings, to meet recycling targets, they are increasingly accompanied by a range of other integrated waste management facilities, including waste transfer, recycling and materials recovery. There are currently no sites supporting incineration with energy recovery in Devon.

Advantages

- Can handle large volumes of household waste ranging from 20,000 tonnes to 500,000 tonnes per annum
- Electricity generated by the process provides an alternative source of energy
- Residues may be utilised for various industrial purposes
- Surplus heat can be utilised in a combined heat and power scheme serving the community
- Technology is more “tried and tested”, and more widely available, than most other energy from waste solutions

Disadvantages

- There is widespread uncertainty regarding the nature of potentially hazardous emissions
- Incineration may divert waste away from recycling initiatives
- High initial cost - large incinerators are very expensive, and have long lead in times
- Buildings are often large and obtrusive
- Significant volumes of residue are produced which will often require final disposal to landfill

APPENDICES

Source: Devon County Council *Waste Local Plan June 2006*

- Toxic residues and fly ash require specialised methods of disposal
- Under existing legislation, any electricity generated is not considered to have been derived from a renewable source, and is therefore exempt from claiming Renewable Obligation Certificates.

Site Requirements

- Site should be located so as to promote an integrated network of waste management facilities across the County
- Facility should normally be located within an industrial area or brownfield site so as to minimise disturbance
- Site should be located away from residential areas
- Site should be located so as to minimise the overall distance travelled by vehicles - where possible, major sites should be served by alternative modes of transport such as rail or water
- Site should be provided with good access by road to minimise congestion and reduce risk of accidents
- Consideration should be given to the need to integrate the facility with other relevant waste management facilities in the vicinity
- Major sites should have good access to the local electricity distribution network
- Sites should be located so as to facilitate the use of incidental heat generated
- Larger facilities may require site areas of up to 5 hectares
- Facilities will require high levels of screening, and large facilities should not be placed in prominent positions. Site should be fenced to contain litter
- Site will require an area of hardstanding for stockpiles of materials
- Site will require hardstanding or buildings to accommodate machinery and plant
- Site will require the incorporation of surface water drainage facilities to minimise ground water pollution

A1.10 Other Energy Recovery Options: Anaerobic Digestion

Anaerobic digestion involves the biological degradation of organic material in the absence of oxygen, producing methane gas and a residue suitable for use as a soil improver. The methane gas produced can be used to meet on site power and process heat requirements.

Anaerobic digestion has the ability to treat the organic fraction of municipal solid waste. It is necessary to carry a high level of waste segregation prior to inputting through this process in order to produce a marketable residue.

An anaerobic digestion facilities site has been commissioned in Holworthy. This site mainly processes agricultural waste, but currently accepts some food waste.

Advantages

- Provides an alternative source of energy
- Process traps methane which is a "greenhouse gas"
- Residues may be utilised as a soil improver

- There are fewer concerns regarding emissions than for other forms of energy recovery from waste such as incineration
- Technology can operate on a small scale

Disadvantages

- Requires a high degree of waste separation, especially if the residue is to be utilised
- Fairly high cost
- Currently, technology does not enable the process to be used on a large scale
- With the exception of sewage sludge treatment, the technology is relatively untried and untested

Site Requirements

- Site should be located so as to promote an integrated network of waste management facilities across the County
- Facility should normally be located within an industrial area or brownfield site so as to minimise disturbance
- Site should be located so as to minimise the overall distance travelled by vehicles
- Site should be provided with good access by road to minimise congestion and reduce risk of accidents
- Consideration should be given to serving major sites by alternative modes of transport such as rail or water
- Consideration should be given to the need to integrate the facility with other relevant waste management facilities in the vicinity: for example, a MRF will normally be required to remove unsuitable materials from the waste stream
- Site area will need to be of sufficient size to accommodate facilities for the sorting of waste prior to combustion
- Where appropriate, the site should have good access to electrical transmission lines and the local electricity distribution network
- Where appropriate, the site should be located so as to facilitate the use of incidental heat generated
- Site may require large industrial buildings, which should not be placed in prominent positions, and will require screening
- Site will require the incorporation of surface water drainage facilities to minimise ground water pollution
- Site should be fenced to contain litter

A1.11 Other Energy Recovery Options: Gasification and Pyrolysis

Gasification and **pyrolysis** are two physio-chemical processes utilised in energy from waste technology:

Pyrolysis - organic waste is heated in the absence of air to produce a mixture of gaseous and liquid fuels and a solid inert residue. The process generally requires a consistent waste stream, such as tyres or plastics, in order to produce a usable fuel. Although relatively

APPENDICES

Source: Devon County Council *Waste Local Plan June 2006*

small plants can be operated efficiently, and modular construction allows flexibility in capacity, there is currently only one such facility in the UK, which takes in tyre crumbs.

Gasification - carbon based wastes are heated in air or steam to produce fuel-rich gases, tar and ash. The technology is capable of treating a wide range of waste types, but requires consistency of waste quality.

Advantages

- Provides an alternative source of energy, either as gaseous or liquid fuel
- Provides a solid inert residue that may be utilised for industrial purposes
- Flexible in scale - modular systems can provide flexibility when additional capacity is required, thus facilitating the provision of a network of smaller scale facilities throughout the County
- Relatively cheap compared to other forms of energy from waste such as mass burn incinerators

Disadvantages

- There is widespread uncertainty regarding the nature of potentially hazardous emissions
- Processes may divert waste away from recycling initiatives
- Requires a consistent waste stream involving high levels of pre-sorting of waste
- Except on a small scale, technology is relatively untried and untested
- Residues may be toxic and require final disposal to landfill

Site Requirements

- Site should be located so as to promote an integrated network of waste management facilities across the County
- Facility should normally be located within an industrial area or brownfield site so as to minimise disturbance
- Site should be located away from residential areas
- Site should be located so as to minimise the overall distance travelled by vehicles - where possible, major sites should be served by alternative modes of transport such as rail or water
- Site should be provided with good access by road to minimise congestion and reduce risk of accidents
- Major sites should have good access to the local electricity distribution network
- Consideration should be given to the need to integrate the facility with other relevant waste management facilities in the vicinity, for example to pre-sort waste prior to combustion
- Site area will need sufficient capacity to accommodate pre-sorting facilities for waste
- Site will require an area of hardstanding for stockpiles of materials
- Site will require hardstanding or buildings to accommodate machinery and plant
- Site will require the incorporation of surface water drainage facilities to minimise ground water pollution

- Site will require a range of industrial buildings dependent on the nature of the facility
- Large buildings should not be placed in prominent positions, and site should be screened so as to minimise visual intrusion and to contain litter

A1.12 Non-Hazardous Waste Landfill Sites

The major existing landfill sites for household, industrial and commercial waste are identified on the **Proposals Map**. The area served by each site for household waste is controlled by the arrangements between the waste disposal authorities (Plymouth, Torbay and the County Council) and the waste collection authorities (Plymouth, Torbay and the District Councils). However, sites are free to receive waste from other Waste Collection Authorities. The locations of all existing biodegradable waste landfill sites in Devon are shown on **Map 6**.

Advantages

- Can provide large scale facility at relatively low capital cost
- May facilitate the restoration of the site, for example by filling a mineral void
- Process can trap methane, which is a "greenhouse gas"
- Can provide an alternative source of energy

Disadvantages

- Unsustainable form of land use unless it aids restoration of the site
- Process attracts a high level of Landfill Tax
- Mandatory limits will require successive reductions in the proportion of biodegradable waste disposed of to landfill
- Pollution liability will remain for a long period after tipping is complete
- Site may have a large environmental impact on the surroundings, for example due to odour, litter and visual intrusion
- Site may attract seagulls and other scavengers and vermin
- Specialised geological requirements will restrict the areas suitable for landfill sites
- Impending European legislation will require the treatment or removal of certain parts of the waste stream prior to final deposition
- Necessity to locate the facility in remote areas increases distance travelled by vehicles
- Emissions from landfill sites can include carbon dioxide and methane, both of which are "greenhouse gases"

Site Requirements

- Site should be located so as to promote an integrated network of waste management facilities across the County
- Site should be located away from residential areas
- Site should be provided with good access by road to minimise congestion and reduce risk of accidents

APPENDICES

Source: Devon County Council *Waste Local Plan June 2006*

- Where possible, major sites should be served by alternative modes of transport such as rail or water
- Site will require the incorporation of surface water drainage facilities to minimise ground water pollution
- Site will require hardstanding or buildings to accommodate machinery and plant
- Site should be located away from major aquifers or other groundwater sources, and should avoid Karstic limestone formations
- Site should take advantage of existing topography so as to reduce the visual impact
- Site must be suitable to facilitate engineering containment
- Site must not be located on an Indicative Floodplain
- Site should not be located within an Airfield Safeguarding Zone to avoid bird strike
- Site must have the flexibility to incorporate other related waste management facilities
- Site must incorporate measures to capture and utilise waste gases
- Site should be screened so as to minimise visual intrusion
- Site should be fenced to contain litter

A1.13 Inert Waste Landfill Sites

Inert waste landfill sites accept specific waste from builders, highway schemes and construction/demolition projects. They vary in size from small sites which occasionally receive waste to larger sites which serve the needs of a local area. Since the introduction of the Landfill Tax in October 1996, and a growth in the recycling of construction waste, the quantity of material disposed of at inert waste landfill sites has decreased significantly. Increasingly, inert material is being recycled, re-used, or utilised in projects which do not require full waste management licensing. Hence, it is unlikely that there will be an overall shortfall in the provision of inert waste sites, but there may be a localised need for appropriate additional sites, especially in the vicinity of large scale developments. The locations of existing landfill sites for inert waste are identified on **Map 6**.

Advantages

- Can provide large scale facility at relatively low capital cost
- May facilitate the restoration of the site, for example by filling a mineral void

Disadvantages

- Unsustainable form of land use unless it aids restoration of the site
- Process attracts Landfill Tax
- Site may have a large visual impact on the surroundings
- Necessity to locate the facility in remote areas increases the distance travelled by vehicles

Site Requirements

- Site should be located away from residential areas

- Site should be provided with good access by road to minimise congestion and reduce risk of accidents
- Where possible, major sites should be served by alternative modes of transport such as rail or water
- Site will require an area of hardstanding for stockpiles of material
- Site will require hardstanding or buildings to accommodate machinery and plant
- Site will require the incorporation of surface water drainage facilities to minimise ground water pollution
- Site should take advantage of existing topography so as to reduce the visual impact
- Site must not be located on an Indicative Floodplain
- Site should be screened so as to minimise visual intrusion
- Site should be fenced to contain litter

A1.14 Facilities for the Treatment and Disposal of Hazardous and Clinical Waste

Clinical waste comes from dentists, doctors, vets, hospitals and care homes for the elderly and disabled. With the exception of some low level clinical waste which may be disposed of at the landfill sites at Heathfield and Deep Moor, most of the clinical waste produced in Devon is incinerated at the facility at Derriford Hospital in Plymouth, which dealt with 2343 tonnes in 1997 – 70% of which originated in Devon. In addition, waste asbestos may also be disposed of at Heathfield and Deep Moor.

At present, there are no facilities for the disposal of other categories of special waste, and all such waste is exported to sites outside Devon.

Advantages

- Enables the disposal of materials which cannot safely be disposed of in any other way
- By providing self-sufficiency, can reduce the distance travelled by vehicles to the point of final disposal

Disadvantages

- There is widespread uncertainty regarding the nature of potentially hazardous emissions from incinerators or toxic landfill sites or other facilities
- Pollution liability may remain for long periods after disposal
- Residue produced will normally require final disposal to landfill

Site Requirements

Site requirements will depend on the method of disposal/final disposal adopted, but will include the following:

- Site will require the incorporation of surface water drainage facilities to minimise ground water pollution
- Site should be located so as to promote an integrated network of waste management facilities across the County
- Site should be located away from residential areas

- Facility should normally be located within an industrial area or brownfield site so as to minimise disturbance
- Site should be provided with good access by road to minimise congestion and reduce risk of accidents
- Site will require hardstanding or buildings to accommodate machinery and plant
- Site must not be located on an Indicative Floodplain
- Site should be screened so as to minimise visual intrusion

A1.15 Waste Water Treatment Sites

The locations of existing and proposed waste water treatment facilities are shown on **Map 7**.

Although a wide range of existing biodegradable waste management methods are currently used for waste water treatment and disposal, more stringent regulations may limit the range of methods available. For example, co-composting would not normally be acceptable unless carried out in an enclosed vessel, although current practice allows sewage sludge to be co-composted with greenwaste in open windrows.

The advantages, disadvantages and site requirements shown below relate specifically to waste water treatment sites. Where additional forms of treatments, for example, composting or incineration, are carried out on site, it may be necessary to take into account the corresponding advantages, disadvantages and site requirements.

Advantages

- Contributes to the improvement of existing facilities in line with the Urban Waste Water Treatment Directive
- In the case of coastal facilities, contributes to the "Clean Sweep" programme, thereby improving bathing water standards
- Local provision of facilities, and the introduction of pipelines, can reduce reliance on road transport
- Products of waste water treatment may be agriculturally useful

Disadvantages

- Widespread distrust regarding environmental impact of facilities, especially odour
- May be long construction period
- Works may have major environmental impact
- Dependent on the method of distribution and disposal of sewage sludge adopted, traffic may be generated in the area

Site Requirements

- Facility should form part of an integrated network of waste water treatment sites
- Facility should be located so as to minimise reliance on road transport
- Facility should be located so as to minimise the distance waste has to be transported from source to final disposal
- Site may need to be located adjacent to the coast, or to a river
- Where possible, materials should be transported via pipeline, rather than by road

- All possible effort should be made to minimise noise and odour
- Care must be taken to reduce visual intrusion, especially where the facility is located in a sensitive area

APPENDICES

Source: Devon County Council *Waste Local Plan June 2006*